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The Official Journal of the Rocks and Minerals Association

Chips from the Quarry

A Plea For Honest Minerals

From time to time our attention has been called to doctored or faked minerals that are displayed in collections as very choice specimens. Cases are common where crystals from one locality have been deliberately imbedded into limestone or other material from some other locality and then sold as choice specimens in matrix to unsuspecting collectors. The sale of such specimens is a downright fraud and dealers or collectors who assemble them should be censured for such practices.

At times a very fine crystal may become broken or fall out of its matrix and often can be repaired or reset. Displaying such specimens in a collection is permissible but it should be stated on the label that the crystal has been repaired and this information should always be given to the buyer when the specimen is sold. Many minerals are delicate or fragile and easily broken. Even tough minerals like rock crystal or amethyst becomes damaged at times with apparent ease. Consequently when an unusually fine specimen is damaged we should try to repair and preserve it if possible. But it should be marked "repaired."

Substances such as brightly colored banded slag have been sold as agate, green or red masses of glass have been passed off as obsidian, dark purple glass as amethyst.

Not long ago a new form of faked mineral was on the market and many specimens, unfortunately, sold to unsuspecting collectors. These were manufactured from alum to which coloring matter had been added. Some of these artificial crystal groups were really beautiful and nicely crystallized, green, red, yellow or white in color. Handsome though they were, they were not genuine minerals and their distribution among collectors is to be regretted. They not only caused confusion with genuine minerals, often being given names of real minerals, but they would decompose in dry or moist air or dissolve in water, which did not help mineralogy any and dealers should have refrained from handling them even as manufactured specimens.

Mineral collecting is a most fascinating hobby. It is entertaining, educational and healthful. It is often the means by which lasting friendships are made or a vocation acquired. It is not necessary to fake or manufacture minerals as there are plenty of good specimens to go around. Let us keep mineral collecting on a high plane free from trickery, deceit or cheap commercialism and when we give or sell specimens to collectors, especially if they are amateurs, let our specimens be genuine, of good quality and fully labelled. And when you buy specimens, purchase them from reliable dealers.

Peter Zodac

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COLLECTING MINERALS IN SCANDINAVIA

By GUNNAR BJAREBY
Boston, Massachusetts

NORWAY

A cruise up and down the beautiful Oslofjord and a visit to Oslo many years ago, as well as reading literature and attending lectures on Norway, made me revisit that country for the fifth time during the summer of 1938. Previously, sightseeing and sketching had been the principal objectives, but this time we were to include mineral collecting, also.

Crisscrossing from the temperate southern parts up to the icy regions of the Arctics, I have found this country one of the most scenic regions of the world. Having seen the sedimentary formations of the Grand Canyon in Arizona with their great variety of warm colors and deep shadows, the glacier-carved Gudvangenfjord seems equally interesting and magnificent with its brilliant greens; neutral and cooler tones. Numerous waterfalls marbleize the dark mountainsides which seem from a boat-deck to tower thousands of feet above.

Besides the stupendous fjords and other marvelous sceneries, Norway has many rare minerals. Perhaps nowhere else have so many species of the radioactive minerals been found. To familiarize ourselves to some degree with these, we had perused much literature and studied the collections in the museum of Harvard, New York, Bergen and Oslo taking notes on these Norwegian minerals.

After a cruise through the Sogne— and Gudvangenfjords, we spent a day on the Hardanger glacier at Finse. There, inside a metric square mile, one sees most of the phenomena associated with a large glacier, from the breaking down of the mountains, the moving and groaning ice, which is brightly blue-colored in the deep crevasses; moraines, rushing glacial torrents on their way down to the deltas in the valleys heavily charged with a light greyish mud, the so called Glacier Milk.

Although early in August, there were several extensive snowfields which made us long for our skis. On the bare ground in between, many rare species of alpine flora subsist up to the very edges of the snow. It is far above the timberline, only a few shrubby varieties of Salix grow in this beautifully wild region. The rocks are of a schistose type, and much hornblende was in evidence as well as other common pegmatite minerals. However, we here collected more plants than minerals.

Saggrenda Silver Mine

On the train from Finse to Oslo one passes through strange landscapes and this railroad, famous for its many miles of tunnels, is yet one of the most scenic routes in the world. After leaving Oslo, the world-famous silver mine in Saggrenda was the first mineral locality we visited. We found ourselves squatting on an empty ore train en route to the interior of the mountain after the management graciously furnished us with smocks and carbide lamps. On an almost straight and but slightly inclined track we rattled along about 600 meters into the main shaft. It was not conven-

ient at the time to descend to the 2000 meters deep workings, but we went through others nearer at hand. Silver we saw, several pounds of it; but it was in a box brought up that very same morning from below. Eventually we came out of the mine and began to explore its extensive dumps. These yielded very little worth taking along. A light green Fluorite is mined in the vicinity and a quantity of it was seen near the smelter, apparently used as a flux.

About the only way to secure specimens of native Silver, is to purchase it from the superintendent. He showed us a large padlocked chest in which we saw several hundred pounds of it. This had gone through crushers and concentrators, consequently most of it was badly disfigured. I handled a number of these specimens, but the selected ones in the office were excellent and among them were two very fine crystals. There were also a few smaller specimens of Argentite locally called "Blue Silver." A recent find of singularly beautiful wire-silver was placed in a drinking glass. It resembled loosely crumpled wires of varied diametres. This was destined for the Mint collection in the city of Kongsberg, a few miles away.

After much parlance I was allowed to buy one of the two crystals, which ordinarily are not sold to private collectors. Since the mine is not in Kongsberg, but actually in Saggrenda, it would be advisable to change the labels on silver specimens from Kongsberg to the locality proper. Saggrenda can be reached from Kongsberg either by bus or train. Permission to visit the mine is obtained from the director residing in Kongsberg, or directly from the superintendent at the mine.

From Kongsberg and Saggrenda one can continue south to the famous Langesundsfjord district with its many interesting localities. And later to the feldspar, quartz and rutile mines in or near Kragerö.

On the liner M. S. Oslofjord we were especially fortunate to meet a young Norwegian student from Oslo, returning from a year's studies in Akron, Ohio. Both of his parents are artists and have a summer house in Nystrand, at the Långesundsfjord. Since we were going to Sörlandet we gladly accepted his invitation to visit them for a few days. There we had a taste of Norwegian hospitality and enjoyed fully our stay with them, sailing and motorboating to several outlaying localities. I was soon nicknamed the "Hammerican" from the constant pounding I did on the islands and desolate skerries.[1] Most of the outcrops of pegmatite have been prospected for Uraninite or other radioactive minerals and feldspar.

LAAVEN ISLAND

The most exciting locality in this district is the small and barren islet, Laaven, known for the rare zirconium mineral Lávenite. This I found and others, such as Johnstrupite, Rosenbushite, Mosandrite, Astrophyllite, Aegirite, Nephelite and a greenish grey Sodalite which fluoresces a rich orange color under the Nico and Quartz lamps; dull yellow under an Argon bulb. Of the more common minerals a dark brown Scapolite was especially interesting. On the island Bjerköen we got Thorite and Arö island yielded Catapleiite, Leucophanite, Hiortdahlite and Eucolite; Stokö island Meliphanite and Homilite crystals.

In order to collect in the Långesundsfjord district a motorboat is necessary. This fjord is not one of the well known ones for sceneries but it has hundreds of small islets and skerries. A detailed map is indispensible, however the owner of the motorboat most likely has one. List the localities carefully in the museums here and abroad. The pegmatite dikes seen from the boat are often worth an inspection, if landing is possible. Boating here is a pleasure, if time doesn't matter, and the weather is good.

BAMLE DISTRICT

From Långesundsfjord we went inland by bus from Brevik to the old apatite mine at Odegaards Vaerk in Bamle district. This mine is not operated and

1 A skerry is a rocky mass much too small to be called an island.

the dumps are used for road construction and now almost obliterated. Enormous Enstatite crystals came from here and were exhibited at the World's Fair in Paris about 40 years ago. Phlogopite was abundant but not very good. I found Hornblende crystals, and Steatite pseudomorphs after Enstatite crystals.

A new quarry nearby is quite interesting. A number of minerals were found of which we took along Wagnerite and radiated Epidote crystals on Dolomite crystals. These localities are about fifteen minutes' walk from the bus route. There are two other localities in the vicinity, one of which is in about one hour's walking distance. According to a quarryman it has more minerals, but time did not permit us to visit the same.

KRAGERÖ

Kragerö is a very picturesque small city on the southern coast of Norway. There are many localities within a half hour ride by motorboat or train. The Sjáen, Lindvikskollen and Tangen's localities are just outside the city, but they are most conveniently reached by motorboat. Feldspar—and Rutile mines pockmark the hillsides, and a number of minerals are found. Alvite crystals were found at Sjáen; on Lindvikskollen's dumps we found several crystals of Keilhauite, Hellandite and Rutile as well as massive Rutile with Hornblende; Hornblende crystals and excellent large crystals of red Scapolite.

On a small island, just below these hills, we saw a huge group of radiating Scapolite crystals. A local mineralogist informed us that it is the largest group known, and that it had been brought to the attention of the government for protection. This occurrence had, as well as all the other islands and outcrops of rock, been subjected to the abrading force of the ice during periods of glaciation.

Tangen's Feldspar mine is well known for its Betafite which occurs as olive—brown or olive-gray crystals in a purplish red crumbly feldspar. Broken crystals are brown to greenish black, and like most of the radio-active minerals, glossy and brittle.

From the more distant Kragerö localities we got Orangite at Fone; Rutherfordine coating Alvite, and bluish Malacon at Gjerstad; excellent black terminated crystals of Tourmaline, and Cordierite at Sannidal.

Time did not permit us to visit the equally interesting Risör, Arendal and Iveland districts, but we met a Norwegian mineralogist, Mr. Johne, in whose company we went to some of the Kragerö localities. From him we obtained most of the minerals which we had hoped to find in the areas not visited by us.

We collected the following minerals in Norway:

Aegirite	Johnstrupite
Allanite	Keilhauite
Alvite	Leucophanite
Argentite	Lavenite
Astrophyllite	Malacon
Bamleite	Meliphanite
Betafite	Metaxite
Blomstrandine	Monazite
Calcite, red	Mosandrite
Catapleiite	Nepheline
Chrysoberyl	Orangite
Cordierite	Pyrargyrite
Dolomite	Pyrite
Emerald	Pyrochlore
Epidote	Rosenbushite
Eucolite	Rutherfordine
Euxenite	Rutile
Fergusonite	Scapolite
Gadolinite	Serpentine
Garnet	Silver
Gummite	Tourmaline
Hellandite	Uranophane
Hiortdahlite	Xenotime
Homilite	Wagnerite
Hornblende	Zircon
Ilmeno-Rutile	

This concludes our adventures in Norway, but we are planning on returning within a few years to visit the other districts.

SWEDEN

En route to Finland over Sweden we made a side trip up to one of the most famous of all localities, the iron and manganese mines at Lángban; pronounced "long-bawn." Since this com-

munity is along a side line, on which but a few trains run daily, much time was wasted in waiting at junctions. There are neither hotels nor lunchrooms, but in a co-operative store one can buy most kinds of food stuffs. We were wolfishly hungry and after some searching found a miner's wife who served meals to a few of the miners, and was kind enough to include us.

LANGBAN

On the newest dump only a few minerals were found, because at the time the operations were going through extensive dolomites. However, we found Pyroaurite and a new brightly green mineral, not yet described, also a lilac colored Anhydrite. The ores have always been sorted out by hand and the best specimens of the numerous minerals are saved by the miners. At the time of our visit only a few minerals were available, because there had been a Geologists' Congress at the mines a few weeks earlier. I had much better luck on my previous visit in 1932, when I found many fine minerals on the dumps. The best find then was a specimen of Hausmannite in Calcite with a few flakes of the exceedingly rare Molybdophyllite; many others were found and I bought some. The following minerals were obtained in 1932 and 1939: and a few unidentified specimens.

Apophyllite
Allactite
Anhydrite
Berzeliite
Braunite
Caryinite
Chert
Dolomite
Finnemanite
Garnet (orange, red)
Hausmannite
Hedyphane
Hematite
Hydrocerussite
Inesite
Kentrolite
Lead (native)
Magnetite
Magnetoplumbite
Manganite
Manganophyllite
Molybdophyllite
Nadorite
Pinakiolite
Pyroaurite
Quartz (ferruginous)
Rhodonite
Richterite
Roeblingite
Sahlinite
Sarkinite
Tephroite
Tilasite
Trimerite

The mines have been in operation since very early in the eighteenth century and are first mentioned 1716. There are extensive dumps which may yield a number of minerals, if they are searched carefully. Visitors not versed in the Swedish language may encounter difficulties; I did not have a chance to meet the director of the mine and know of no one speaking English but the station master.

YTTERBY ISLAND

Returning from Finland we visited another famous Swedish locality the Quartz and Feldspar mine on Ytterby Island. It was from the Ytterby minerals, that the four elements: Yttrium, Ytterbium, Terbium and Erbium were discovered. The mine has not been operated for many years and the dwindling dumps are now used for construction of roads.

From Stockholm one goes by steamer to Waxholm and changes there for a smaller local boat. The mine is only 100 meters from the landing at Ytterby; in fact one may start prospecting on the landing itself. Permission to collect should be obtained from the owner, Mr. Johanson, who lives beside the mine. We came in the early forenoon, and stayed till the last boat in the evening and had a regular field day. I picked up my first specimen while talking to the owner. It was a fairly good one of Fergusonite in Feldspar between layers of Biotite. Biotite from this locality is quite radioactive as are other local minerals like Gadolinite, Yttrotantalite, Xenotime, Allanite, Vasite and Tengerite. We succeeded in finding them all, except Xenotime. The most exiting find was that of the very rare Vasite which is an alteration product of Allanite. It retains the tabular form of Allanite, but has a definite red color. Another interesting find was a large mass of badly fissured feldspar carrying much Gadolinite, Allanite, Fergusonite and a few whitish spots of Tengerite coating the Gadolinite. The Gadolinite is roughly crystallized and of a dull greenish black color. Much of the Allanite is closely associated with the former, but is more definitely crystallized and of a brighter and darker black. The difference is readily seen, when the speci-

men is placed in water. Tengerite is an alteration of Gadolinite, and very little of it was noticed. Fergusonite is fairly easy to find; it occurs in tetragonal pyramidal crystals up to 2 centimeters in length, usually in the interstices of feldspar between layers of Biotite. Several specimens of similar appearance were found, but carried Garnets of a color very close to that of Fergusonite and where crystals were indefinite or crushed, it required more than a casual glance to tell them apart. Yttrotantalite is very scarce and only a few specimens were found with small yellowish crystals. To obtain good crystals of a number of the radioactive minerals is indeed a rare treat, because of their usually splintery nature. I have noticed several species that even affect the surrounding matrix by splitting it up with numerous radiating cracks up to several centimeters in length. Notably Allanite, Betafite, Gummite, Kolm and Wiikite, etc.

A good crystal of Biotite, 14 x 9 x 2 centimeters, was found as well as Sericite, an opaque orange colored Quartz, several kinds of feldspar and a couple of unidentified minerals.

During the afternoon we were very agreeably surprised by the arrival of Professor A. F. Rogers of Stanford University, California. We had met the distinguished mineralogist a few days earlier in the Riksmuseum in Stockholm, through Professor Aminoff and Mr. Carlson-Ygger from New York.

Of what we found we concluded that this locality is still capable of producing very interesting minerals, though not perhaps museum specimens. A little while before the boat came, we had coffee together in the owner's house and later struggled down to the landing with our heavy sacks. I thought I noticed the little steamer listed a little, when we put our specimens down on the deck. We changed at Waxholm to a larger steamer and arrived in Stockholm in about two hours during which time we enjoyed the company of the congenial Professor Rogers.

Of other minerals obtained in Sweden, from various localities were: Ilvaite, Knopite, Axinite, Cobaltite crystal, Lepidolite, Pollucite, Petalite, and Prochlorite pseudomorph after Magnetite.

FINLAND

While in Finland we had delayed mineral collecting until the very last. We had our vacation here, pleasant days with boating and fishing whenever possible. I was busy sketching, trying to take along as much as possible of the Finnish scenery and country life.

I accepted an invitation to attend a special meeting in the City Museum of Kuopio held by 'Friends of the Museum.' The essentials of the proceedings were translated to Swedish for my benefit. This museum has a small collection of minerals, nevertheless it contained several of our American minerals, and a number of fine specimens of Finnish minerals. This meeting re-awakened my temporarily side-tracked interest in the mines and quarries of Finland. The director of the museum gave me introductions to two mineralogists in Helsinki, both of whom we visited a few days later.

One of them is the owner of the largest private collection in Finland. It is housed in the loft above his garage, the beams of which sagged to an alarming degree under the many tons of specimens. Here I purchased practically all of the minerals which I had hoped to find in that country. They represented several distant localities; thus we saved at least two weeks. The minerals obtained were: Chrome-Diopside, Chrome-Tremolite, Fuchsite, and Uvarovite from Outokumpu, a new locality for this rare garnet; Sillimanite, Melanite crystals, Pargasite crystals, Hypersthene; Gigantolite, an alteration of large Tourmaline crystals; Tantalite crystal, Wollastonite, Wiikite both brown and yellow, fibrous Kyanite, Triplite, Chondrodite, Cordierite, Guanajuatite from Orijärvi, a new locality; Muscovite in curved plates; Mizzonite crystals and Indiumiferous Sphalerite.

Of these minerals the rare Wiikite from the abandoned feldspar quarries at Nuolaniemi in Impilahti near U.S.S.R. is the most interesting. It is a rare earths

mineral and is radioactive; occurs dark-brown and greyish yellow.

Rural Finland offers exquisite motives to the artist, and traveling architects can learn much about the up-to-the-minute modernized cities here and elsewhere in Scandinavia.

The Helsinki University collection of minerals was not accessible on account of extensive alterations. We visited the many art galleries and the National Museum. Anyone visiting Helsinki should not miss this marvelous museum. The frescoes by Gallen-Kallela are the most outstanding masterpieces, and rank with the very best in the World of Art. The extensive collections of culture historic objects from the Stone age to the present are amazing. It was with reluctance that we left the beautiful Helsinki and the land of 'Suomi.'

After a few days in Stockholm we again sailed on the Baltic Sea to Gotland where we visited the mediaeval city Visby. The ancient citywall with its many towers dates back to about 1000 A.D. They are kept in good repairs with a few minor restorations. The architecture inside the wall must conform with the old Baltic style, but outside the city proper many ultramodern houses are being built.

DENMARK

Again we sailed, this time to Öland, the island of wind mills of many types, and then to the mainland. We also made a trip to Köbenhavn in Denmark where we visited the Glypotek artgalleries and later the Kryolit Bolaget's ware houses. There was an immense supply of Cryolite and associated minerals. The director sent an assistant who helped us in finding them. They were: Cryolite, white and 'smoky', Chiolite, Ivigtite, Gearksutite, Thomsenolite, Siderite and Hagemannite, which appears to be an alteration of Siderite; superficially it resembles Limonite.

These were the last minerals collected, and we returned to Sweden. A few weeks later we traveled through Norway to Bergen where we boarded the *M. S. Stavangerfjord* for New York. The Atlantic Ocean now was very stormy, but after a week of it we were in the hands of the U. S. Customs officers. Minerals did not interest the one assigned to our baggage, and after one look at a specimen of Betafite he shook his head but said nothing.

Of course all of us know what he thought!

WORLD'S LONGEST ASBESTOS FIBRES FOUND IN RHODE ISLAND

On page 4 of the January, 1940, issue of ROCKS AND MINERALS, it was stated in the article on "Asbestos" by O. Jay Myers, that the longest asbestos fibres ever found came from South African crocidolite and measured 11 inches. It is most gratifying to report that once again the United States breaks the world's record as a much longer fibre has been found in Rhode Island. We are indebted to Mr. Wm. L. Bryant, Director Park Museum, Roger Williams Park, Providence, R. I., for the following interesting information:

"Not long ago a young man living in North Providence presented to this museum a specimen of amphibole asbestos which he had collected from rocks exposed in his neighborhood during the excavation of a sewer trench. The fibres in one specimen measured 14¼ inches in length and accordingly this would seem to be a world's record for the length of asbestos fibres. The specimen is silvery white in color with a slight greenish tinge."

ADDITIONS TO THE MINERALS OF THE DISTRICT OF COLUMBIA AND VICINITY

By DR. TITUS ULKE

The following two species and two varieties should be added to the list which appeared in the January-February-March, 1936, issues of ROCKS AND MINERALS, making the number of known species of minerals 93 and of distinct varieties or subspecies at least 47.

92 Ptilolite: Composition = $RAl_2Si_{10}O_{24}+5H_2O$ (R = Ca:K_2:Na_2 in prop. 6:2:1 approx.) Found in short capillary needles, aggregated in delicate, cottony, globular tufts, white in color, in cavities in weathered diorite in a trap rock quarry near Centerville, Va., about 30 miles west of Washington, D. C.

93 Hatchettite, prob. Mountain Tallow. Found in soft, very light, wax-like, crumbly, small aggregates, scattered on sandy loam over a ferruginous gravel conglomerate along the south bank of Piscataway Creek, about 1 mile west of Farmington Landing, Md., and 12 miles south of Washington, D.C. A preliminary test by Dr. C. Milton, of the U. S. Geological Survey, indicated that this substance was a hydrocarbon ($C_{29}H_{60}$?) melting in boiling water and dissolving in ether, which ether solution, upon evaporation, leaves a dazzling white crystalline crust resembling paraffin. Specimens found by the author in October, 1939, are now in the collections of the U. S. Geological Survey and the U. S. National Museum, both in Washington, D. C.

To the mineral varieties occurring within 30 miles of Washington should be added:

Quartz var. Kinradite: A spotted, porphyritic variety of jasper was recently picked up by Mr. Elra C. Palmer in the shape of a dark red water-rounded float, 2 x 3 inches in size, from a gravel bank on Blagden Avenue, Washington, D. C.

Its surface, after polishing, showed numerous circular or irregular, orange-yellow spots, about 1/8 inch in diameter, consisting mostly of quartz but a few of feldspar and epidote, scattered throughout a dark red matrix, which reflected a beautiful, blue-black, metallic glance. It closely resembles the kinradite from near Sausalito, Marin Co., California.

Opal var. Hyalite: A variety of opal, grayish-white in color, was discovered by a Mr. Rapp incrusting decomposed diabase, in a recently opened traprock quarry between Camp Washington and Centerville, Va. In the above quarry, Mr. Rapp also discovered some fine crystals of apophyllite associated with other zeolites and prehnite and nodular and botryoidal masses of prehnite, associated with datolite, laumontite, and apophyllite, in cavities in the diabase.

Along Rose River, at Syria, Madison County, Va., the writer picked up some very fine, large stones of pure, blood-red jasper and small float boulders of unakite (epidote-porphyry) which polished into very beautiful exhibition specimens. The material occurs fairly abundant in the glacial drift of the region mentioned. As massive unakite occurs in place at Milam Gap, Va., near the Skyline Drive, which is the source of Rose River, the float material was probably transported by floods or ice down the Rose River valley to Syria.

During June, 1936, the author discovered about a dozen, egg-shaped nodules of black and of gray flint and yellow chert (this with a fine, bright reddish yellow patina on it) on the gravelly beach of the Potomac River below Broad Run, Md., about 10 miles s.e. of Washington, D. C. Some of the specimens had been chipped by the Indians (probably Piscataways or Mayowances) which once resided in this section. Most of the specimens were added to the U. S. National Musuem mineral collection as a new find for this general region.

ASBESTOS INDUSTRY IN 1938, FINAL ANNUAL FIGURES

By OLIVER BOWLES AND K. G. WARNER
Nonmetal Economics Division U. S. Bureau of Mines

Asbestos is indispensable to modern life either in peace or in war. It is essential to automotive transport; in the form of gaskets and packings it is necessary to steam machinery, and as a heat insulator it plays an important role in both household and factory.

The United States is the largest asbestos consuming country in the world but produces only a small fraction of its requirements of raw materials. In 1938 domestic sales amounted to only 5½ percent in quantity and 4 percent in value of domestic requirements. How could our needs be met in an emergency? Stimulation of asbestos production bears little promise. Although many occurrences of chrysotile asbestos have been found in the United States, few of them seem to have commercial possibilities. Arizona deposits furnish excellent crude fiber but mining costs are high, transportation is difficult, and freight rates to eastern markets are excessive. Vermont deposits are extensive and could produce large quantities of mill fibers of moderate to short lengths, but they furnish little fiber of spinning grade. Chrysotile deposits are known in California and some other States, but none appear to be capable of development into consistent producers of a large tonnage of spinning fiber.

The possibility of making synthetic asbestos to take the place of the natural fiber has been suggested, but due to certain special qualities for high-grade asbestos that man cannot duplicate in a laboratory, the manufacture of synthetic asbestos seems to be farther from attainment than the manufacture of synthetic diamonds. The United States evidently must continue to depend on foreign supplies.

Production of asbestos in the United States in 1938 amounted to 12,901 short tons compared with 13,896 tons in 1937, a decrease of 7 percent. The quantity sold or used by producers in 1938 (10,440 tons valued at $247,264) decreased 14 percent in quantity and 28 percent in value. The decrease in value is probably due chiefly to increaed sales of Arizona short fibers. Stocks in the hands of producers as of December 31, 1938 were higher than in 1937.

Chrysotile was produced in Arizona and Vermont and amphibole (tremolite) in Maryland. Plans are being made to resume operations at the Morgan Asbestos mine in Placer County, Calif., and also for developing a property 9 miles from Glenrock, Converse County, Wyo. It has been reported to the Bureau of Mines that the Karstolite Company no longer operates the anthophyllite eposit in Gallatin County, Mont., but a new company, the Montana Asbestos Company, is in process of organization.

Asbestos (unmanufactured) consumed in the United States, 1929-1938

Year	Sold or Used by producers		Imports[1]		Exports[1]		Apparent Consumption[2]	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1929	3,155	$351,004	262,427	$11,153,017	709	$108,467	264,873	$11,395,554
1930	4,242	289,284	208,681	7,064,824	771	95,318	212,152	7,258.790
1931	3,228	118,967	136,361	3,749,340	1,714	122,391	137,875	3,745 916
1932	3,559	105,292	96,754	2,250,200	1,707	94,936	98,606	2,260,556
1933	4,745	130,677	119,542	3,542,483	1,378	88,521	122,909	3,584.639
1934	5,087	158,347	120,334	3,377,994	1,669	94,182	123,752	3,442,159
1935	8,920	292,927	166,585	5,125,413	850	87,896	174,655	5,330,444
1936	11,064	314,161	243,602	7,524,937	3,744	310,197	250,922	7,528,901
1937	12,079	344,644	307,188	10,470,208	3,004	253,734	316,263	10,561,118
1938	10,440	247,264	179,490	6,160,602	2,780	288,617	187,150	6,119,249

1 Figures on imports and exports compiled by M. B. Price, of the Bureau of Mines, from records of the Bureau of Foreign and Domestic Commerce.
2 Quantity sold or used by producers plus imports minus exports.

Trends in Domestic Consumption

As indicated in the preceding table domestic consumption fluctuates considerably from year to year. Consumption made substantial gains each year from 1934 to 1937, but declined greatly in 1938.

Prices

All prices are quoted on a short ton basis. Canadian price are f.o.b. Quebec mines, tax and bags included; Rhodesian, South African and Russian, c.i,f. New York; and Vermont prices, f.o.b. mines, Vermont.

According to quotations in Metal and Mineral Markets published by the McGraw-Hill Publishing Co., Inc., New York City, prices of Canadian asbestos were as follows: Crude No. 1, $700-$750; Crude No. 2 and sundry crudes, $150-$350; spinning fibers, magnesia, and compressed sheet fibers, $110-$200; shingle stock, $75-$77 until December when the high advanced to $78; paper stock, $40-$45; cement stock, $21-$25; floats, $18-$20; and shorts, $12-$16.50.

Rhodesian Crude No. 1 was quoted at $275 and Crude No. 2 at $250 until March when the prices were advanced to $300 and $260, respectively.

South African prices quoted since March 1938, are as follows: Amosite: Grade B 1 (white), $140; Grade B 3 (dark), $120. Transvaal blue: Grade B (long fiber), $450; Grade S (short fiber), $140.

Russian Crude "AA" was quoted at $750; Crude No. 1, $275; Crude No. 2, $240; and shingle stock, $67.50 and up.

Vermont prices were constant throughout the year as follows: Shingle stock, $57; paper stock, $40; cement stock, $25; and shorts and floats, $12-$18.

Imports

The following table shows imports 1934-38 by classes. Shipments from the United Kingdom which produces no asbestos probably considered of fiber originating in Rhodesia or the Union of South Africa.

Asbestos (unmanufactured) imported for consumption in the United States, 1934-38, by countries and classes

Country	Crude (including blue fiber)		Mill fibers		Short fibers,/		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1934	3,582	$458,353	41,960	$1,807,512	74,792	$1,112,129	120,334	$3,377,994
1935	3,940	639,980	63,098	2,920,242	99,547	1,565,191	166,585	5,125,413
1936	7,912	1,157,551	79,663	3,790,055	156,027	2,577,331	243,602	7,524,937
1937	14,326	1,926,057	103,766	5,139,317	189,096	3,404,834	307,188	10,470,208
1938:								
Africa—British:								
Union of South Africa	3,677	456.073	.....	.....	.....	.....	3,677	456,073
Other British	2,745	310,147	.....	.....	.....	.....	2,745	310,147
Austria	.....	.....	.....	.....	3	142	3	142
Australia	21	6,006	.....	.....	.....	.....	21	6,006
Canada	1,360	321,424	51,141	2,701,494	113,570	2,043,844	166,071	5,066,762
Finland	.....	.....	.....	.....	89	3,564	89	3 564
Italy	18	12.477	.....	.....	1,551	38,488	1,569	50,965
Malta, Gozo, and Cyprus	.....	.....	.....	.....	6	294	6	* 294
U. S. S. R.	1	479	5,201	258,593	63	1,525	5,265	260.597
United Kingdom	22	5,205	.....	.....	22	847	44	6,052
	7,844	1,111,811	56,342	2,960,087	115,304	2,088,704	179,490	6,160,602

/ Asbestos, n.e.s., containing not over 15 percent foreign matter.

World Production

The following table shows production of asbestos throughout the world in so far as figures are available.

World production of asbestos 1934-38, in metric tons1/
(Compiled by M. T. Latus)

Country	1934	1935	1936	1937	1938
Argentina	....	2/ 13	....	....	(3)
Australia: South Australia	....	36	81	123	(3)
Western Australia	157	143	162	43	(3)
Bolivia	....	....	(4)	21	(3)
Bulgaria	3	3	....	....	(3)
Canada,2/	141,502	190,931	273,322	371,967	262,970
China	290	(3)	(3)	(3)	(3)
Chosen	4	6	69	70	(3)
Cyprus,2/	7,712	7,634	9,659	11,892	(3)
Czechoslovakia	2,100	2,600	2,700	(3)	(3)
Finland	1,735	1,742	3,963	3,330	(3)
France	400	450	405	250	(3)
Greece	30	2	1	2	(3)
India, British	25	64	57	102	(3)
Indochina	....	....	5	5	(3)
Italy	2,252	4,320	6,113	6,393	(3)
Japan,2/	1,000	1,000	1,000	1,000	1,000
Southern Rhodesia	29,224	38,644	51,116	51,722	(3)
Turkey	4	104	119	157	(3)
Union of oSuth Africa	15,960	20,600	22,894	25,975	(3)
U. S. S. R.	92,200	95,500	125,117	(3)	(3)
United States (sold or used by producers)	4,615	8,092	10,037	10,958	9,471
Venezuela	....	76	71	(3)	(3)

1/ In addition to countries listed, a small quantity of asbestos is reported from Madagascar.
2/ Rail and river shipments.
(3) Data not available.
(4) Less than one ton.
3/ Exclusive of sand and gravel, and stone (waste rock only) production of which is reported as follows: 1934, 4,238 tons; 1935, 2,744 tons; 1936, 2,815 tons; 1937, 3,611 tons; 1938, not available.
4/ Exports.
5/ Approximate production.

FOSSIL DEER SKELETON FOUND IN SOUTH DAKOTA

A skeleton of Leptomeryx, a very small type of extinct deer which lived in South Dakota some thirty million years ago, has been added to the prehistoric animal exhibits at Field Museum of Natural History, Chicago, Illinois.

The animal is one of some twenty-five specimens which came to the museum imbedded in a slab of rock which an expedition led by Elmer S. Riggs, curator of paleontology, excavated in the Bad Lands. A discovery of so many skeletons in a single slab has not been duplicated by an other institution, so far as the records show, according to Paul O. McGrew of the museum's division of paleontology. All twenty-five skeletons lay within an area about four by seven feet in dimensions.

Large concentrations of miscellaneous fossil bones are sometimes found in ancient stream channels, says Mr. McGrew, but seldom do complete skeletons occur thus, and a concentration of complete skeletons such as this is entirely unique in his experience. The evidence would seem to indicate that a herd of the animals died on the spot where they were found, probably while seeking refuge from a severe storm.

In order to mount a skeleton so as to show approximately what the animal's form and stature in life was, it was necessary to chisel the rock away from the skeleton bit by bit in the museum laboratories, and then assemble the bones with meticulous care. This small ancient deer was, in size, little larger than a modern jack-rabbit. It may have been related to ancestors of the modern deer, or have belonged to an early side branch of the camel family, as the camel and deer are believed to have had a common ancestry in the remote past, many millions of years ago.

WESTERN MINERALOGICAL EXPOSITION

By CLARK HARRISON

The Western Mineralogical Exposition was held January 13 to 19, 1940, in the Chamber of Commerce Building, Los Angeles, California. It was sponsored by the Engineer's Club of that city, and its president, Dr. John Herman, well known metallurgist and chemist, was in charge of the exposition, being assisted by many leaders of the several Southern California groups. This show gave impetus to the establishment of new mineralogical societies. Today, California has 20 mineral societies, the idea starting back in 1931.

State Mineralogist, Walter Bradley, opened the show with an address upon California minerals, describing how the state runs the whole gamut of precious metals, industrial minerals and semi-precious gems. Because the state represents all of the geological ages of the earth, it affords more metals and minerals than any other state; and new minerals and mines as great as any in the past will continue to crop up for centuries into the future.

Everything mineralogical in the Southwest was featured, a wealth of mineralogical specimens being displayed, their uses, and all industrial stages from the raw material to the finished commercial product were shown. Many well known collectors displayed nice specimens; and there was a dark room for fluorescent demonstration, and plenty of beautiful fluorescent minerals. The Los Angeles Museum had a remarkable array of mineral specimens, coordinated with a picture arrangement of pre-historic times, forming a great study in geology and mineralogy. Mrs. Max Hirsch of Hollywood, whose specialization is petrified wood, displayed an unusual assortment of her choice specimens (polished and unpolished) incuding turquoise, opals, and fossils. Another unusual collection to be displayed consisted of polished samples of tiles, travertines, marbles, granites, etc., once owned by Mexico's Cabrera family, and requiring hundreds of years in the making, being collected from all the earth's civilized countries. It is now the property of Mrs. Walter R. Thurston of Los Angeles.

The Washington Geology Club of George Washington High School presented a display worthy of special mention and arranged with good taste. It was such a gorgeous collection that many of the professional collectors present contributed nice specimens of their own to further enlarge the juniors' collection.

An interesting feature of the exposition was Dr. Herman's lecture on the geological history of the earth, starting in the beginning, 3 billion years ago, and covering the representative highlights of all geologic ages down to the present time. His lecture was aptly illustrated by use of paintings on panels in 10 foot sections, running entirely around the room. They were 2½ feet wide, and aggregated a length of 310 feet.

Various kinds of mining machinery and equipment were shown; and selling and trading of specimens were permitted. The most important feature of the show was a case containing over $50,000 worth of virgin gold, and the official key used to open the San Francisco's World's Fair last year. The key is made of California native gold, inlaid with native gems, weighs 1½ pounds, measures over a foot, and is valued at $35,000.

Lack of space prohibits the listing of all displays, but everything was well covered from borax and talc, thru the mineral line, to polished onyx and agates. Large audiences attended daily, and the displays were so interesting that many of the visitors spent several days at the exposition.

ANOTHER WEIRD EXPERIENCE

By OSCAR R. SMITH

The weird experience described in the August, 1939, number of Rocks and Minerals, by our dear editor, recalls a somewhat similar experience of mine back in 1917.

I was in the southern part of Missouri at the time and one day received a telegram from our firm stating that I would be joined soon by our Dr. Breitkopf to hunt down and inspect a reported iron ore deposit.

Dr. B. arrived within a few days, hired a two-horse rig and we were on our way. After several hours driving through deeply rutted and slippery muddy roads we finally arrived at our approximate destination. Here we inquired where the "heavy rock" was to be found but received many negative shakes of the head and furtive glances until finally one old heavily bewhiskered native volunteered to guide us part way. Mysteriously enough, we had to wait until the old gent got his small kit which contained-of all things-a piece of chalk, dried horse-chestnuts, a hatchet and a pair of scissors. These, he explained, were to be used for protection against evil spirits. He vowed the place where we were going, was haunted.

Down a wide gully we started, skirting a creek bottom recently swollen by heavy rains but now subsiding. Eventually we reached a clearing. Here the guide stopped, pointed to a spot about 100 yards ahead to one side of the gully and said:—"Thar she be. I waits till you-all get back."

Doc and I hastened forward until we reached the spot pointed out to us. Here we groped about for a moment or so until both of us seemed at the same instant to spy an opening beyond the heavy foliage. We unlimbered our packs, lighted our carbide lamps, and in we started.

Taking but a few steps I soon began to feel very heavy in the feet but very light from the knees up. The hammer and chisels I carried seemed weightless. A few more steps and suddenly these seemed to be pulled out of my grasp by some unseen force and thrown against the cave-like wall where they stuck as if glued. Suddenly my feet became lighter but also more sensitive. The spiked soles had been ripped off my shoes by this same invisible force, my shoe-laces untied, my watch stopped running and I suddenly felt weak.

Doctor B must have noticed my consternation, rapidly approaching the panic stage, and to sense my racing thoughts about evil spirits, chalk, chestnuts, etc., for he began to chuckle and said something about this being more powerful than the famous lodestone of Eisenschreckenstein. The word "lodestone" quickly brought me back to my normal senses and I felt rather piqued with myself for my display of concern.

A hasty but effective survey showed that hammers and chisels would be held tightly at any part of the exposed mass. I then started to chisel "a la Zodac" with the same results reported by Mr. Zodac almost twenty years later.

Doctor B. looked things over for a moment, then took off his celluloid collar and looped it not too snugly around the middle of one of our chisels. Holding the chisel point in contact with the lodestone, he struck the chisel head a crisp blow with the hammer, checking the rebound of the hammer head about three inches away from the chisel. This started the chisel darting back and forth between the lodestone and hammer head in a manner comparable to a miniature compressed air drill. By drilling a three inch circular series of holes we neatly trepanned several nice cores of lodestone. The base of this core was broken from the mass with a powerful bar and in this way entirely retained its magnetism. We encountered no trouble with broken material in the chisel holes impeding the cutting presumably because the electrostatic charges accumulating on the celluloid collar served to attract the particles from the hole to the collar where they were easily brushd off.

The cores were taken back to St Louis, analyzed, and an experimental smelt made. The product was found to be a very superior iron due to the absence of deleterious elements and the presence of a small amount of dubium.

Later, the property was thoroughly prospected, the ore mined out and all that remains of the most powerful lodestone deposit ever found is a hole in the ground. The only specimen left that I know of is in a jewelry store window in Hannibal, Mo., and is used to demonstrate the resistance to magnetic effects of a certain line of watches. Ours stopped.

GEODES IN KENTUCKY AND TENNESSEE

By HARRY W. MAUNTEL

There is a similarity between the geode locality of south central Indiana and the geode locality in and around Cave City, Kentucky and Redboiling Springs, Tennessee. The topography of this section is of the same nature as that of the cave and limestone region of Indiana. Here one will notice the characteristic sink holes and red soils which are underlaid with a strata of limestone. It is in this section along the ravines and small streams that one will encounter many geodes of all sizes from the size of one inch to two feet in diameter.

Although during the past few years geodes are fast disappearing along the main highways, one can still secure many of them in the out away hill regions three or more miles off the main traveled highways 31E and 31W and between Cave City and Mammouth Cave, Kentucky. This region continues south and southeast to Burkesville, Kentucky, and down into Tennessee to and around Redboiling Springs. All of these regions from north of Horse Cave, Kentucky, on into Tennessee are rich in calcite formations, which will add beauty and history to any geological collection.

NEWLY REVISED MOTION PICTURE FILM VISUALIZES PRODUCTION AND USES OF SULPHUR

The mining, distribution, and industrial utilization of sulphur, one of the many economically important minerals produced in the United States, have been interestingly delineated in a two-reel educational motion picture film just revised by the Bureau of Mines in cooperation with a large sulphur producing company.

The United States produces nearly two and one-quarter million tons of sulphur each year, or more than 75 percent of the world's total production.

The opening scenes of the revised film show a typical sulphur mining town near the Gulf of Mexico, where most of the sulphur is mined. Line drawings show the geological formation of sulphur deposits, and animated drawings depict the highly ingenious method of mining the sulphur by melting it underground with heat supplied by superheated water, and then forcing the liquid sulphur to the surface by compressed air. Views are given of the huge boilers for the generation of steam used for water heating and power, and the enormous reservoirs needed to assure an adequate supply of water. To reach the sulphur deposits, wells are drilled with equipment similar to that used in drilling for oil. Additional scenes show how the liquid sulphur is pumped from the wells to steam-heated sumps and from the sumps to huge storage vats where it cools and solidifies. When a vat has reached a height of 40 to 50 feet, the sides are removed and the sulphur is blasted for loading to gondola cars by buckets holding 4,000 pounds at each lift.

Reel 2 shows the transportation of sulphur to chemical plants and to ships for export. Drawings and animated manikins show in a most interesting and informative manner the various industrial uses of sulphur, such as paper, rayon, chemicals, rubber, insecticides, and the manufacture of sulphuric acid, the chief product of sulphur. Sulphuric acid is used in the production of medicines, water purifier, synthetic rubber, storage batteries, safety glass, photographic films, plastics, dyes, alcohol, soap, glycerine and glue.

Copies of the film, in both 16- and 35-millimeter size, may be had for exhibition by schools, churches, colleges, civic, and business organizations, and others interested. Applications for the film should be addressed to the Bureau of Mines Experiment Station, 4800 Forbes Street, Pittsburgh, Pa., and should state the width of film desired. No charge is made for the use of the film, although the exhibitor is expected to pay transportation charges.

GIANT TOPAZ ACQUIRED BY HARVARD UNIVERSITY

The second largest topaz crystal in the world—a Brazilian giant weighing 250 pounds, will soon be placed on exhibition in the Mineralogy Museum of Harvard University, Cambridge, Mass. Large enough to make hundreds of thousands of gems, the crystal mass has faces so accurate that they can be measured to the hundredth of a degree by the instruments used at Harvard.

The crystal is of fine gem-stone quality with only a little discoloration caused by manganese dioxide. This discoloration was probably deposited in a dendridic layer on the surface of the crystal several thousands of years before it had finished growing, for the dioxide is arranged parallel to the crystal faces. A similar crystal, about a foot in length, is situated on the tip of the main crystal, and the adjoining faces are clearly outlined by a "phantom" within.

The crystal was found in a large dike in coarse pegmatite that had formerly been mined for large quartz crystals. The cavity in which it had been formed was lined with several topaz crystals of smaller size. Judging from the immense size of their specimen, Harvard mineralogists estimated the crystal took ten million years to form completely. Several times the process was stopped for a few hundred years as shown by a few phantoms within the crystal body.

A most peculiar property of topaz crystals is beautifully shown on this specimen. Some crystal faces are less resistant than others, because of the arrangement of atoms within the crystal, so two in these positions are partially "etched" by hot silica-bearing solutions.

The growth hillocks which are the property of all topaz crystals of any size are not too evident on this specimen. Prof. Palache, who is now revising Dana's *System of Mineralogy*, pronounced it as the finest topaz he has ever seen. After being analyzed, the formula was found to be the usual fluo-silicate of aluminum, $(AlF)_2SiO_4$.

Corrections

In the last issue of ROCKS AND MINERALS two illustrations (top of page 49) were reversed which may lead to some confusion for the reader. If the pictures are reversed mentally any difficulty should be cleared up.

The printer's attention was called to a transposition of the lower pictures, the upper ones being correct. Unfortunately in changing the lower illustrations the upper ones were also changed which made the matter as bad as it was before.

On page 43 of the same issue a slight error occurred in the title for the petrified wood. The locality, Redrock Canyon, is east of Mojave (and not Mohave as given), Kern County, California.

Grahl's Fine Orpiment Spared!

The very fine though extra large specimen of orpiment purchased by Harry Grahl at the Over-Montgomery Exhibition Sale, in New York City, on Dec. 21, 1939, has not gone under the rock trimmer as has been anticipated. Explains Harry, "Confucius says, "If mineral specimen is too big for house then build bigger house"."

Prof. Palache Tendered Dinner

The Division of Geological Sciences of Harvard University, together with many friends and former students, tendered a dinner to Professor Charles Palache upon his retirement as Professor of Mineralogy and Curator of the Mineralogical Museum on Monday, February 5, 1940. After the dinner a portrait of the Professor was presented to the University in the Mineralogical Museum.

Professor Palache has served Harvard University for forty-five years, and in these years the Department of Mineralogy and the Mineralogical Museum has grown into great prominence.

Gem Shop Issues Cat. No. 60

An attractive 20-page catalog, 4x9 inches in size and listing a large number of gems, minerals and books on these subjects has just been released by The Gem Shop, Box A797, Helena, Mont. Write for your copy today!

A CHERT LOCALITY IN ALABAMA

By PETER ZODAC

Editor Rocks and Minerals

Along Routes U.S. 11, Ala. 35, U.S. 72 from Gadsden to Scottsboro to Bridgeport, in northeastern Alabama, the roads in many places are strewn with white crushed stone which may be mistaken for limestone. At least we thought it was limestone when we traveled the routes March 17th, 1938. But its peculiar whiteness rather intrigued us and finally we stopped the car and got out to examine the stone. No sooner did we pick up a specimen than it was immediately recognized as chert and we wondered from whence it came as no quarry nor pit had been anywhere visible along the way. Through a fortunate meeting with two patrolmen, six miles north of Scottsboro, we were guided to a huge pit, nearby, that was about 1000 feet west of Route U.S. 72.

The pit, a side hill cut, extended almost north and south for about 1500 feet and was about 50 feet wide and 35 feet high at the face. Here chert was present in huge horizontal beds at least 25 to 30 feet thick, showing much fractures and intermixed with reddish clay. Although present in large amounts it was practically impossible to obtain even a fair-sized chert specimen due to the fractures. Some of the chert was snow white in color and resembled common opal. Apparently it was not necessary to crush any of the stone for road fill as nature had already done this; at least no machinery of any kind was visible. The pit at the time of our visit was not in operation.

Bluish chalcedony and kaolin (white clay) were noted in small masses in the pit.

For many miles north of the pit, up into Bridgeport, along Route U.S. 72, chert was seen outcropping alongside of the road. Reddish clay was so prevalent, however, overlaying the chert everywhere, in some places being 5 feet in thickness or else intermixed with it, that little of the chert really showed.

MINERAL DAY AT THE WORLD'S FAIR

(New York City)

MONDAY, JUNE 17, 1940

Specially Set Apart for you and all persons Interested in Mineralogy

PLAN TO BE THERE

Much interest has been awakened by our announcement in the February, 1940, issue under the above title. Many members are expressing a desire that it may be possible for them to be present at the Mineral Day at the Fair on June 17th realizing that special efforts are being made to make the mineral exhibits from states and nations of outstanding importance.

We hope you have entered the date in your engagement book as a "must be kept appointment with the fair."

Watch ROCKS AND MINERALS for the news as it develops and comes to us from Mr. D'Agostino and the Plainfield Mineralogical Society.

Two Moss-Agates from India, actual size

D'ASCENZO COLLECTION

(Photograph by Dillon, Philadelphia)

INCLUSIONS IN QUARTZ

By NICOLA G. D'ASCENZO

There are so many things in favor of this remarkable mineral that it is difficult to enumerate them all. The few I cling to are as follows:

1. Quartz, being a hard, tough substance, can be handled without much fear of harm coming to it.

2. When need be, it can be given a beautiful polish and it can easily be kept clean.

3. The peculiar and fantastic forms that it sometimes takes are awe-inspiring and indeed, often prophetic. I have in mind particularly a beautiful specimen of eye-agate in the fine collection of Charles R. Toothaker, fellow member in our Philadelphia Mineralogical Society. But this is no ordinary eye-agate, for directly beneath the eye and connected perfectly to it is a straight line; the wheel on the road! Unquestionably a mischievious unit which has jelled, in the vast realm of mineralogical fantasmagoria.

4. Last, but by no means least, are the inclusions in quartz, in which mineral the possibilities are seemingly unparalleled for sheer beauty. Again some are breathtakingly defiant of all that seems possible. Those that go beyond this latter superlative (I have a few) were undoubtedly put together by one of the lesser deities out of pure cussedness.

The privilege of collecting and having specimens of this nature was originally inspired, I dare say, many (too many) years ago by my Mother and Father who were sufficiently interested in my general knowledge to encourage my collection of beach pebbles, which were gathered betwixt and between an occassional foray on the lair of the unwilling and recalcitrant sand-crab. Little did I then dream that the most common of the minerals could also be the most uncommon!

Later, my early interest was given further impetus through a display of minerals in a store window on Chestnut Street, Philadelphia, which were labeled in part, "These mineral specimens were collected in and near Philadelphia." Further reading revealed that these had been placed there by our own Academy of Natural Sciences. To say that I was startled would be to put the reaction mildly. I was non-plussed! Had I been in a coma all my life? In and near Philadelphia—but where?

The obvious thing to do of course was to get to the Academy as fast as possible. I did not, for instance, deem it wise to drive to Phoenixville and ask a traffic policeman where the Pyromorphite came from, nor would I inquire in Overbrook, of the same genus homo, for Smoky Quartz. No, I would go to the Academy. If it were a hoax I should soon find it out! To be truthful, I half thought it was, else why were peoples homes not full of this imperial stuff which was right under their noses?

I found both Mr. Keeley and Mr. Gordon to be quite affable personages and they assured me that the Chestnut Street exhibit was theirs and that the labels on the sepcimens did not lie. I was told that of course some of the quarries had since been filled in or weren't working or were full of water but I could still get lots of things if I were willing to dig. Having thus been reassured I was given the directions to as many localities as my note book would hold and was sent on my way, very, very happy indeed and quite grateful for a most interesting and informative few hours.

The years that intervene are of course fraught with the hardships and pleasures that are the life of the arduous collector. Many localities for instance were entirely too prolific and I had visions of the necessity of a truck. This was, however, before the progressive eras of discrimination, which begun daintily with the waste basket and ended with a roar in the trash barrel.

Hereunder I give you a partial list of the Quartz specimens in my collection that I consider the most interesting, in addition to the specimens illustrated:

1. A clear prismatic crystal from Brazil, 2½ by 4 inches, containing 19 phantoms. Three in the center and one at the top are coated with pink Mica, the others with green Chlorite.

2. A clear pyramidal crystal from Switzerland, 2 by 2 inches, containing a black Hematite covered phantom and partly enclosing Albite, Rutile, and Octahedrite.

3. An externally clear crystal from Brazil, ½ by 1-⅞ inches, containing a red phantom suffused with Hematite.

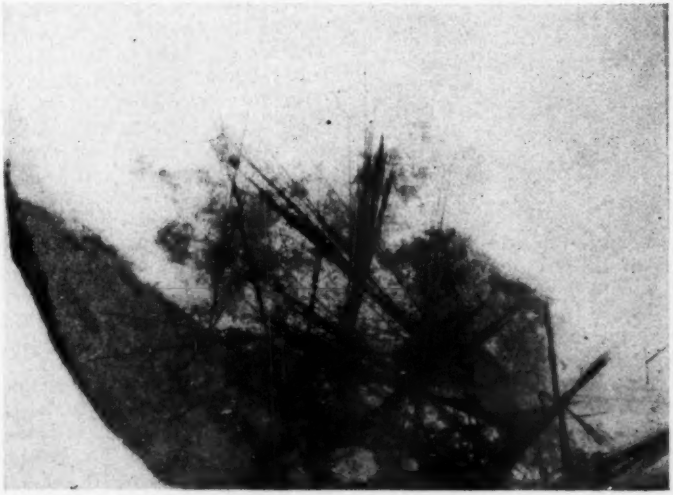
4. A clear crystal from Hot Springs, ⅝ by 1-⅛ inches containing an Ankerite coated phantom topped by Calcite.

5. An elongated smoky crystal from Brazil, 1 by 4½ inches, containing a phantom 3½ inches long, partially covered with rhombohedra of Calcite showing glide laminae.

6. A clear crystal from Brazil, 2 by 2¼ inches, containing 31 Amethyst phantoms, two superimposed Rutile bearing phantoms, the needles being perpendicular to the pyramid faces of the Amethyst phantoms, the whole being crowned by another phantom which is covered with blood red scales of Hematite. Negative crystals having the bipyramidal form of Quartz may be seen with the aid of a lens.

7. A clear crystal from Switzerland, 1¾ by 1½, containing a green Chlorite covered phantom resembling a sea-scape and enclosing short doubly terminated Rutile crystals.

8. A clear modified twin crystal from Switzerland, 1 by 2 inches, containing myriad citrine phantoms giving the whole the appearance of a citrine crystal. Triangular etch pits are on the rhombohedral faces.



Rutile and Chlorite in Quartz, Brazil

D'ASCENZO COLLECTION

(Photograph by Dillon, Philadelphia)

9. An almost black twin crystal from Silesia, 1½ by 3 inches, containing a smoky phantom and enclosing Amphibole. Some Stilbite may be seen on the surface.

10. A clear parallel growth of several doubly terminated crystals from Switzerland, 1⅜ by 3 inhes, tinted green by the enclosed Byssolite.

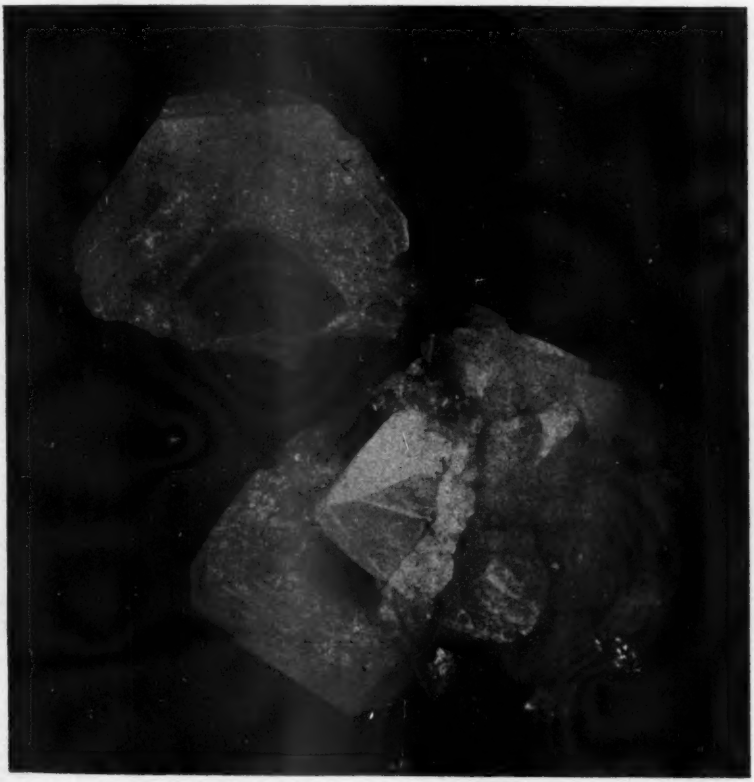
11. A twin crystal from Africa, 13/16 by 2⅜ inches, which contains so much green Actinolite that it seems to be solidly that color. The termination appears to be only three rhombohedral planes, the other three requiring the lens to see.

12. A clear doubly terminated tapered twin crystal from Brazil, 1½ by 5¼ inches, enclosing a single Tourmaline crystal about 1/16 by ⅜ inches, as well as Chlorite and Rutile.

13. An irregular crystal from Switzerland, 1-3/16 by 1⅝ inches, on which is a surface of reticulated needles of saffron-colored Rutile.

14. A clear crystal from Mexico, 1½ by 2¼ inches, in which are profuse inclusions of moss-like wire Silver.

15. A clear twin from Brazil, 1 ¾ by 3½ inches, containing a 3/16 inch Goethite ball.



Capped Quartz, Germany

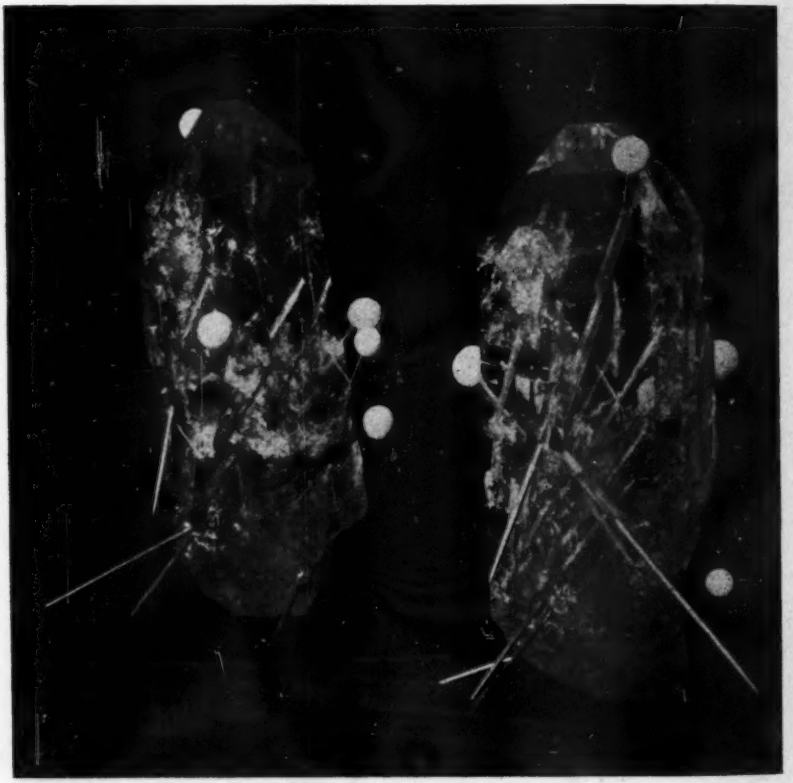
D'ASCENZO COLLECTION

(Photograph by Dillon, Philadelphia)

16. A clear prismatic crystal from Brazil, 1⅜ by 2 inches, enclosing a matted mass of light green Actinolite, presenting the appearance of a hay-mow.

17. A clouded doubly terminated crystal from Arizona, 1¾ by 2¾ containing a single ⅛ inch orange-colored crystal of Scheelite.

18. A clear portion of a large crystal from Brazil 2⅜ by 2½ inches, filled with air bubbles in liquid inclusions, the largest bubble being ¼ of an inch in diameter, which moves freely in a ¾ inch cavity, along with some mineral fragments. Some of the liquid inclusions, each containing a single bubble, form trains of as many as ten in number.



Acicular inclusions in this crystal from Switzerland were weathered out, leaving perforations directly through the crystal as demonstrated by the pins. Six such make the crystal a veritable pin cushion. Mirror shows reverse side.

D'ASCENZO COLLECTION

(A. N. S. Photo by Gordon)

Space does not permit a detailed description of other crystals enclosing the following: Jamesonite, Brookite, Stibnite, Clinchlore, Cookeite, Sphalerite, Galena, Pyrite and Marcasite as well as other material awaiting positive identification. The collection also contains many notable specimens formerly in the Kunz and Calvert collections, some of which are included in the list as above.

A smoky Quartz Crystal from Brazil showing an air bubble in a liquid (water) inclusion. Actual size.

(A. N. S. Photo by Gordon)

This specimen, recently presented to the Academy of Natural Sciences by Mr. D'Ascenzo, has just been placed on exhibition in the Mineral Hall of this famous institution. The crystal is spotlighted from the rear of the white opal glass background. When a visitor approaches the case be automatically sets the crystal rocking from side to side, putting the air bubble in motion. This is accomplished by hidden electrical units actuated by a body-capacity unit. The exhibit was prepared by Messrs. William Pitman, William Birchall, and Theodore Kopp, under the direction of Samuel G. Gordon.

Rocks and Minerals Association
1940 Outing

The Rocks and Minerals Association will sponsor an outing this year. The date selected is Sun., May 19th.

Clubs who may be interested in cooperating with the Association by holding outings in their respective areas are invited to do so. Will the secretaries of these clubs notify the secretary of the Association where their outings will be held, the meeting place and who will be in charge. This information should reach us by April 5th at the latest so that it may appear in the May issue of ROCKS AND MINERALS.

. . Collectors' Tales . .

By PETER ZODAC

THE COURTESY OF SOUTHERN STATE TROOPERS

On March 17th, 1938, while heading north from Scottsboro, Ala., towards Bridgeport, in the extreme northeastern part of the same state where we were to call on a member of the Rocks and Minerals Association, J. R. Lee, our progress was rudely stopped by a flat tire. We were exactly six miles from Scottsboro, on Route U. S. 72 which traverses a thinly populated but very pretty section of the state. We pulled off to the side of the road and then got out to change the tire. We had no sooner started to work on the damaged wheel when an unusual sound attracted our attention and we looked up to see two motorcycle policemen stopping alongside of us. Their approach was so unexpected that for a moment we were nonplussed with astonishment. We had seen only a car or two on the road, after many miles of travelling so that even a motorcycle was quite conspicuous. But more than this it was the sight of the police themselves which really amazed us as they were the first ones seen during our ten day tour of the south. Ever since March 10th, when we had left Peekskill, N. Y., on which day we had passed some motorcycle policemen in Central New Jersey, we did not see another policeman anywhere during our travels. We had passed through Delaware, Maryland, Virginia, North and South Carolina, Georgia, had stopped in the biggest cities, too, and not a single policeman, not even a traffic officer, had we seen. So no wonder the sudden appearance of the two officers in Alabama rather unsettled us.

For a moment we thought a ticket was to be given as both officers walked towards us. What traffic violation had we committed! And we stood up to hear the worst. But to our greater amazement, the two officers picked up the tools we had dropped and proceeded in a very businesslike manner to change the tire for us.

"What are you doing that for?" we gasped out, wholly astonished at this unexpected assistance.

"Why, this is one of our duties," pleasantly replied one of the officers. "We always help out motorists when they are in trouble."

"Can you imagine that!" we mumbled, dazedly. "We wish we had policemen like you in New York!"

After the wheel had been changed and we had thanked the officers for their very courteous assistance and were preparing to be off, one of the officers casually asked if they could be of any further assistance. A bright thought struck us.

"Can you tell us where this crushed stone comes from?" pointing to the material which covered the shoulders of the road and which we had recognized as chert.

"We sure can. It comes from a pit right near here. We will take you there if you want to see it."

We accepted the invitation, turned the car around and followed them. We went about 100 feet, turned right on a dirt road which ended at the pit about 1000 feet away, but not visible from the main road. Here a very pleasant 15 or 20 minutes was spent examining the pit and in getting further acquainted with the two officers whose names we learned were Bankhead Bates and Roy Bradford.

Though our visit to Alabama was not of long duration it will always be pleasantly remembered due to those courteous and very friendly southern gentlemen, Officers Bates and Bradford of the Alabama Highway Patrol.

CLUB and SOCIETY NOTES

Michigan Mineralogical Society

The annual banquet of the society was held at Devon Gables, January 9, 1940, at which time the following officers were elected: President, J. F. Roberts; Vice-President, Mrs. Dwight Henderson; Secretary, Mrs. A. B. Voorhees; and Treasurer, Hugh Millar.

The program was in charge of a committee headed by Mrs. Mihelcic who planned a very entertaining evening. There was a display of polished stones and jewelry made by the ladies of our society, as well as beautiful colored slides of a trip through our National Forests shown by another member. Mrs. Goddard read an excellent paper on "Iron," which was really a historical paper on every phase of its use. There were other short talks, one by our Past-President, Mr. Fritts, who presented the incoming President, Mr. Roberts, with a gavel he had made of granite for a head, held to a steel handle by a band of copper— a most interesting gift and very appropriate.

The regular meetings of the society are held on the second Monday of each month at the Cranbrook Institute of Science, Bloomfield Hills, Michigan. The society would be glad to welcome at its meeting any visiting collector who may like to attend.

Mrs. A. B. Voorhees, Secretary.

Northern Ohio Guild Holds Business Session

Members of The Northern Ohio Guild of The American Gem Society gathered in Case School of Applied Science for the first meeting of the year on the night of Tuesday January sixteenth.

The regular lecture and demonstration work was dispensed with by President Charles Carolyne in order that the well attended group might take care of a great deal of business that had accumulated over the holidays.

A well rounded out program for the remainder of the season was announced by the program chairman with a tentative visit to the laboratories of John Carroll University scheduled for February.

William O. Theis
Publicity Chairman.

New Haven Mineral Club

The guest speaker for the March meeting that will be held on Monday, March 11 1940, will be James F. Morton, Curator of the Paterson, N. J., Museum. Mr. Morton's subject will be "Collecting in California and Arizona."

Come early if you want to obtain choice seats as a large group is expected to hear this popular speaker.

Thomas Rock and Mineral Club

At the Christmas Dinner of the Thomas Rock and Mineral Club, in Philadelphia, Pa., every member was present and contributed to the festivities. One of the amusement features was a game of "Riddle Rocks and Muddled Minerals." Each member was given a sheet of paper containing five anagrams, which he was to solve. At the end of ten or fifteen minutes, each member was called upon in turn to give the anagram he was unabled to do; any one who could solve it was told to add it to his list. A prize was given to the member with the largest number of correct answers to his credit.

This game went over so well that I thought it might be of general interest. I am enclosing part of the list with their appended solutions which were worked out and selected by our Entertaining Committee.

Mrs. Alice H. Thomas, President

RIDDLE ROCKS AND MUDDLED MINERALS

1. A garrel	1. Realgar
2. A linko	2. Kaolin
3. A new tool list	3. Wollastonite
4. Asia bed	4. Diabase
5. As I sort gruel	5. Grossularite
6. A time gent	6. Magnetite
7. Bare arid lot	7. Labradorite
8. Boy melted in	8. Molybdenite
9. Cheat mail	9. Malachite
10. Circon mile	10. Microcline
11. Coy clad hen	11. Chalcedony
12. Do seal it	12. Sodalite
13. Drolen behn	13. Hornblende
14. Erluit	14. Rutile
15. Gain teems	15. Magnesite
16. Gallop as ice	16. Plagioclase
17. Go in a tear	17. Aragonite
18. Hop clear city	18. Chalcopyrite
19. Horrit type	19. Pyrrhotite
20. I bit toe	20. Biotite
21. I c a pot pie	21. Copiapite
22. I dust a lane	22. Andalusite
23. If we tunel	23. Wulfenite
24. I I ate tnt	24. Titanite
25. I met lion	25. Limonite

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How to Collect Minerals. By Peter Zodac. A guide book for the collector, 80 pp., 15 ills., $1.00. Rocks and Minerals, Peekskill, N. Y.

Fifty Back Numbers of Rocks and Minerals Magazine, all in good condition and all different, $10.00. If you have back numbers send a list of them with your order and we will try not to duplicate any of them. Rocks and Minerals, Peekskill, N. Y.

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